

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	School Closures and Reopenings During the COVID-19 Pandemic: A Scoping Review Protocol
AUTHORS	Li, Dan; Nyhan, Kate; Zhou, Xin; Zhu, Yunxu; Castro, Danielle; Vermund, Sten; Brault, Marie

VERSION 1 – REVIEW

REVIEWER	Derek Shendell Rutgers School of Public Health, Environmental and Occupational Health and Justice
REVIEW RETURNED	09-Jul-2021

GENERAL COMMENTS	Thanks for opportunity to review this scoping review protocol. I believe my constructive critique comments will help strengthen it and your future work, especially if your data sources/references cited are more complete for year 2021 if truly to be for 2020 + 2021. See attached. The reviewer provided a marked copy with additional comments. Please contact the publisher for full details.
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REVIEWER	Abdulrahman S Bazaid University of Hail, Department of Clinical Laboratory Sciences
REVIEW RETURNED	24-Jul-2021

GENERAL COMMENTS	Thank you for allowing me to review this study protocol. This protocol aimed to evaluate published literature on the impact of school closure and reopening during COVID-19 pandemic. Introduction Well-written Methods Exact end date (or month) of the study should be added instead of (present). Would be good to include criteria use to assess methodology.
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REVIEWER	Julii Brainard University of East Anglia, Norwich Medical School
REVIEW RETURNED	28-Jul-2021

GENERAL COMMENTS	My understanding of a scoping review is that it needs to be a survey of the available literature, to indicate what specific research questions may be reasonable to ask and try to answer. Yet this article keeps saying things like " ...we will conduct a scoping review to systematically examine the impact of COVID-19 related school closure and reopening on K-12 schools. " That sounds like
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	<p>assessment of actual outcomes, not inventory of outcomes.</p> <p>In addition, there are too many missing specifics and apparent unintentional restrictions. "Target participants for this review are school members in K-12 schools" - does that mean only American schools? Are you only planning to only include pupils age 5/6-18; what about school systems that start children in formal education at age 4? You could add 'reception' to the search words to capture English style school-start systems. What are the equivalent words in Spanish or French?</p> <p>The information stated on the Data Chart Template is too vague, it needs to be more specific or people will extract inconsistently. Will there be dual independent data extraction, how will disagreements be resolved. Is there a separate full text review stage?</p> <p>There's nothing in the extraction template about timing - were outcomes measured days or months after school closure? If 'stopped face to face learning' is the exposure, then when during followup were the outcomes measured? Does duration of closure matter? Maybe any mental health impacts for instance self-resolve after school is back in session for 3 months. Can any data tell us that?</p> <p>"What is known about school closure and reopening during the COVID-19 pandemic?" One presumes that "known about" means mental and physical health impacts on pupils and staff, but would be best to explicitly say it, rather than economic impacts, learning loss, or reduction in community transmission (which many think closing schools will achieve).</p> <p>"What research questions have been covered in the current studies?" - yet precise research question is not in the Data chart template (things to extract). Unless the below are meant to be sub-categories of types of research question?</p> <p>Knowledge, Attitude, and Behaviors of school closure and reopen during COVID-19 Parent belief/concerns Teacher belief/concerns Parent mental health Teacher mental health Student mental health</p> <p>It was not clear to me that the review would pay attention to learning loss as an outcome of no-in-person teaching conditions. Maybe too far outside scope for BMJ-Open, and yet could have indirect lifelong impacts including on health of individuals. Worth mentioning.</p> <p>The impacts will be different depending on child's age. Teenagers are at highest risk of completely disengaging from education aspirations. Does 'School Type' in the extraction sheet mean age range of pupils? It could mean private vs. govt or other things.</p> <p>Below 2 links that are scoping review protocols that indicate the much more complete level of information that should be supplied:</p> <p>https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=197149 https://bmjopen.bmj.com/content/bmjopen/10/8/e040413.full.pdf</p>
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	<p>The search phrases are going to retrieve a lot of hits. The pubmed one works as written, got ~5200 hits. I had to rewrite the Scopus one, and got 9163 hits from below; you might want to limit by subject area using Scopus too, if health impacts are the main focus for instance.</p> <p>(TITLE-ABS-KEY (school* OR student* OR teacher* OR kindergarten* OR "educational personnel") AND NOT TITLE-ABS-KEY (college* OR universit* OR "medical school*" OR "nursing school*" OR "dental school*")) AND (TITLE-ABS-KEY (covid OR covid19 OR covid-19 OR "sars cov 2" OR pandemic)) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020))</p> <p>As positive point, I do think a scoping review in this area about what are the most feasible and useful research questions related to school closure during the time of Covid would be a good thing to undertake. This effort just needs a lot more planning.</p>
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REVIEWER	Lonni Besançon Monash University
REVIEW RETURNED	10-Aug-2021

GENERAL COMMENTS	<p>Before I start this review I would like to highlight that my primary field of expertise is not within the field of this study proposal. However, since I have had experience in reviewing (and publishing) on COVID and the impact of Non-Pharmaceutical Interventions before, I accepted the review request. I will limit my review to topics I have enough confidence providing feedback on and will highlight topics that I do not feel I have enough legitimate experience with.</p> <p>I will start this review with comments on the form rather than the content/plan.</p> <p>The first paragraph of the abstract's introduction currently uses strong wording and might seem bias to the reader. School closure is one NPI that has been advocated to be useful to limit the spread of COVID on the one hand but has, on the other hand, been reported/said to have a strong negative impact on children's lives. I would strongly suggest to frame the introduction more in these terms rather than starting directly with the negative impact on school closure. As currently framed, this introduction would leave a reader wondering why some government even decided to close schools, so I would recommend trying to show a more objective stance in this first paragraph. As a matter of fact, I would tend to think that the introduction (on page 5) does a much better job at proposing a nuanced take at the problem. I would thus suggest that the authors take some inspiration from their own work to adapt their abstract's introduction.</p> <p>Throughout the study protocol the authors use the terminology K-12 which is an american expression used to refer to primary and secondary education [A,B]. This terminology was new to me and it might be confusing for some. Although the authors define in their manuscript, I am not sure using this term throughout the study protocol (and the future manuscript) is really helpful.</p> <p>On the proposed method/content now. There is no specific order to any of these items.</p>
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	<p>I initially had some doubts on the use of google translate for a systematic review process. While looking at the literature on the topic, there seems to be contradictory evidence (e.g., [C] VS [D]). While [C] is more recent than [D], the limitations stated by the authors are pretty clear and I wonder of the validity of the method. The breadth of languages already spoken by the authors seems big enough IMHO to have a wide variety of articles. Nonetheless, further examination of the literature seem to point that translators can be reliable [E,F]. I wonder if the authors have considered using DeepL too to perhaps check on what they will obtain from google translate.</p> <p>From the content of the study protocol and the queries that the authors have made accessible in the manuscript, it would seem that the authors plan to exclude all papers containing “college” or “university”. I wonder if this could not exclude papers that would contain school and university both (although I am not sure if there are such papers), and if the authors should not think of excluding “kindergarten” or “pre-school”.</p> <p>For the critical appraisal, I wonder if the authors did not use the wrong citation. While looking for the JBI’s critical appraisal tool (provided as a link in ref 32), I encountered a “page not found”. I suppose the authors probably wanted to reference [G]. This reference notably states that “Critical appraisal or some similar assessment of the quality of the literature included in a systematic review is essential. A key characteristic to minimize bias or systematic error in the conduct of a systematic review is to have the critical appraisal of the included studies completed independently and in duplicate by members of the review team. The systematic review should present a clear statement that critical appraisal was conducted by at least two reviewers working independently from each other and conferring where necessary to reach decision regarding study quality and eligibility on the basis of quality. “ I would therefore like to know more on how critical appraisal will be conducted (how many reviewers/coders and how disagreements will be handled) and in particular how critical appraisal will be done for papers that are not in English.</p> <p>In the authors’ manuscript, I could not directly find how they plan to handle different article types. In particular when it comes to COVID19 and schools, different articles types have been used with widely different purposes. Many opinion papers have been published that only use data from previous papers while “research letters” or “letters to the editors” have sometimes presented data (e.g., [H] that is even claimed to be a peer-reviewed letter to the editor [I]).</p> <p>I feel like the research questions in this study protocol are very broad and I wonder whether they might actually be too broad. In their article summary, the authors state that the findings “will contribute significantly to keeping K-12 school members safe” but the question on evidence/findings of previous studies is not even part of the research questions that the authors have. Overall, I feel like there is a mismatch between the expected outcome of the study and the research questions. I would tend to argue that the research questions would need to be refined and that the expected findings should match the research question(s) better. To some extent I also wonder, and I would very much like to discuss this further with other reviewers or the authors, whether the scope that the authors set out for their study protocol is not too large. Indeed, from the manuscript</p>
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	<p>and the different research questions, expected findings and data chart template, it would seem that the authors are trying to understand the impact of school closure on the spread of COVID, the impact of schools reopening on the virus, and the impact of school closure on children (as far as mental health and learning outcomes etc...). It seems that each and everyone of these topics would need its own review somehow so I wonder if the goal of this proposed review is not too ambitious.</p> <p>The current data chart template does not seem to propose to classify articles based on which strain of the virus they focus on. If the authors focus on the impact of school closures/openings on the transmission of the virus (as seems to be the case, cf my previous point), then I would tend to argue that the strain of the virus should be considered as potential thing to note for each article as well, in particular of the recent evidence that Delta seems to be more contagious and (potentially conflicting evidence here) might be more harmful for youngsters than previous variants.</p> <p>I appreciate that the authors will register this study protocol as an OSF pre-registration once it is approved.</p> <p>While this goes beyond the scope of this review, I think that the resulting paper will need a statistical review which I will not be capable of providing considering my expertise.</p> <p>Overall, I think this review proposal is definitely interesting, relevant, and timely. I would however argue that it needs some refining and additional details before it is accepted. Most of these can probably be addressed with a single minor revision round on the manuscript.</p> <p>[A] https://en.wikipedia.org/wiki/K-12#Usage [B] https://en.wikipedia.org/wiki/Educational_stage [C] https://doi.org/10.7326/M19-0891 [D] Balk EM, Chung M, Hadar N, Patel K, Yu WW, Trikalinos TA, Chang LKW. Accuracy of Data Extraction of Non-English Language Trials with Google Translate [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2012 Apr. Report No.: 12-EHC056-EF. PMID: 22624170. [E] https://doi.org/10.1021/acs.jcim.8b00534 [F] https://doi.org/10.6035/MonTI.2020.ne6.5 [G] Aromataris E, Fernandez R, Godfrey C, Holly C, Kahlil H, Tungpunkom P. Summarizing systematic reviews: methodological development, conduct and reporting of an Umbrella review approach. <i>Int J Evid Based Healthc</i>. 2015;13(3):132-40. [H] https://www.nejm.org/doi/full/10.1056/NEJMc2026670 [I] https://science.sciencemag.org/content/371/6533/973</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer 1 Comments (Dr. Derek Shendell)

Comment 1 Please revise this sentence; please be incredibly specific about the time period relevant to the reference and this summary statement. Things changed winter-spring 2021 in much of USA.

Author Response: Thank you very much for pointing this out. We have revised the sentence and specified the time period. The sentence now reads:

"According to a national survey, 4 out of 10 US teens did not use online learning portals during the first semester following the start of the pandemic."

Comment 2 & 3 This sentence belongs much farther up in the Introduction; perhaps near start of this paragraph? I suggest you move it for organization and flow. | I feel this sentence belongs at end of first paragraph of Introduction, not at end of (short) third paragraph of Introduction. It supports, with reference, the final statement of current first paragraph.

Author Response: Thank you very much for this insightful comment. We have revised the structure and moved the first sentence to the beginning of the paragraph. Our introduction has been reorganized and the second sentence has been moved to the beginning.

Comment 4,6,7,8,9 Comments on citation recommendations and modifications

Author Response: We want to thank the reviewer very much for the insightful recommendations. We learned a lot from reading the paper. The paper was retrieved by our search strategy. We have added the paper to the reference list, and have modified the citations.

Comment 5 Okay. But, what about references cited below as #15 (and possibly even part of #13), given protocol followed per #32? Clarify.

Author Response: Thank you very much for this helpful comment. We have modified the wording of the sentence to reflect the purpose of a scoping review. The sentence now reads:

"Despite the importance of the topic, to date, there is no comprehensive review that inventories the impact of COVID-19 on K-12 schools (primary and secondary schools) and vice versa."

Reviewer 2 Comments (Dr. Abdulrahman S Bazaid)

Comment 1: Exact end date (or month) of the study should be added instead of (present).

Author Response: Thank you very much for this insightful point. We have added the dates in the methods section. The section now reads:

"The scope review will take place from August 1st, 2021 to November 15th, 2021. On October 31st, we will perform a final round of updated search and citation chaining."

"Sources of evidence published from 2020 to October 31st, 2021 will be included."

Reviewer 3 Comments (Dr. Julii Brainard)

Comment 1: My understanding of a scoping review is that it needs to be a survey of the available literature, to indicate what specific research questions may be reasonable to ask and try to answer. Yet this article keeps saying things like " ...we will conduct a scoping review to systematically examine the impact of COVID-19 related school closure and reopening on K-12 schools. " That sounds like assessment of actual outcomes, not inventory of outcomes.

Author Response: We appreciate this insightful comment. We completely agree with Dr. Brainard. The aim of a scoping review is to provide an overview/inventory of the current evidences, not to assess the outcomes. We have modified the wording throughout the paper accordingly. The main objectives of this scoping review are to identify evidence types, investigate how research is conducted, and determine knowledge gaps.

Comment 2: In addition, there are too many missing specifics and apparent unintentional restrictions. "Target participants for this review are school members in K-12 schools" - does that mean only American schools? Are you only planning to only include pupils age 5/6-18; what about school systems that start children in formal education at age 4?

Author Response: Thank you, Dr. Brainard, for this truly helpful comment. We will include studies on K-12 schools across the globe. We completely agree with Dr. Brainard on the point regarding unintentional restrictions. The focus of our scoping review is on K-12 school members. Thus, we have removed the age restrictions from the inclusion criteria.

Comment 3: The information stated on the Data Chart Template is too vague, it needs to be more specific or people will extract inconsistently. Will there be dual independent data extraction, how will disagreements be resolved. Is there a separate full text review stage?

Author Response: Thank you very much for pointing this out. There will be a dual independent full-text review stage, and a dual independent data extraction. Conflicts will be resolved by a third independent reviewer. The methods section has been updated to include details of the review and extraction process. The section now reads:

"We will conduct two rounds of screening. Two independent reviewers will screen the title and abstract, as well as the full text of the manuscript retrieved by our search strategy. Conflicts will be resolved by a third reviewer. We will conduct a dual independent data extraction. To ensure accurate data extraction, two independent reviewers will extract each article using an online form called Qualtrics. A third independent reviewer will resolve any disagreements. We developed a charting template to facilitate the extraction of data across reviewers regarding characteristics of articles included in our review and key details pertinent to our objectives. The form will be refined (or consolidated) once a sample of studies has been charted independently by two or more reviewers. Both quantitative and qualitative data are expected to be included in the results of the review. These findings will be presented in the form of narratives and visuals, such as evidence 'maps' and tabular presentations."

We have updated the Data Chart Template with extraction criteria and details to ensure consistent extractions.

Comment 4: "What is known about school closure and reopening during the COVID-19 pandemic?" One presumes that "known about" means mental and physical health impacts on pupils and staff, but would be best to explicitly say it, rather than economic impacts, learning loss, or reduction in community transmission (which many think closing schools will achieve).

Author Response: Thank you very much for this insightful comment. We have added the sentence "What types of studies have been done on investigating the impact of COVID-19 on school members' physical and mental health?" to the section.

Comment 5: It was not clear to me that the review would pay attention to learning loss as an outcome of no-in-person teaching conditions. Maybe too far outside scope for BMJ-Open, and yet could have indirect lifelong impacts including on health of individuals. Worth mentioning.

Author Response: We are grateful for your recommendation. In this scoping review, we will examine the different types of research that has been conducted on the impact of school status on learning loss. The extracting template has been updated to include this information.

Comment 6: Does 'School Type' in the extraction sheet mean age range of pupils? It could mean private vs. govt or other things.

Author Response: Thank you very much for this insightful question. Some potential school types include (but are not limited to): public schools, private schools, day schools, boarding schools, elementary schools, middle schools, high schools, charter schools, magnet schools etc. We will add some of the examples to the manuscript and the data extract chart to clarify this outcome.

Comment 7: You could add 'reception' to the search words to capture English style school-start systems. What are the equivalent words in Spanish or French?

Author Response: Thank you, Dr. Brainard, for this insightful comment. Our scoping review will only include primary and secondary schools (K-12 schools). We will exclude papers on pre-kindergarten or nursery. Thus, we will also exclude receptions from our searches.

Dr. Brainard is thanked for highlighting the issue of the languages. The Virtual Health Library bibliography database has been added to leverage the added value of the database in retrieving foreign language papers. The ability of our search strategy to retrieve foreign language papers was thoroughly investigated. We found that since most foreign language papers have English titles and subject indexes, our search strategy can retrieve most if not all of the relevant foreign language papers.

Reviewer 4 Comments Dr. Lonni Besançon

Comment 1: The first paragraph of the abstract's introduction currently uses strong wording and might seem bias to the reader. School closure is one NPI that has been advocated to be useful to limit the spread of COVID on the one hand but has, on the other hand, been reported/said to have a strong negative impact on children's lives. I would strongly suggest to frame the introduction more in these terms rather than starting directly with the negative impact on school closure. As currently framed, this introduction would leave a reader wondering why some government even decided to close schools, so I would recommend trying to show a more objective stance in this first paragraph. As a matter of fact, I would tend to think that the introduction (on page 5) does a much better job at proposing a nuanced take at the problem. I would thus suggest that the authors take some inspiration from their own work to adapt their abstract's introduction.

Author Response: We greatly appreciate this insightful and kind comments. We have edited our introduction according to the comment. The introduction of the abstract now reads:

"The COVID-19 pandemic has necessitated widespread school closures, and reopening schools safely has a pivotal role in the well-being of children and teachers, SARS-CoV-2 transmission control, and optimal societal functioning. Widespread school closures in response to the COVID-19 pandemic have caused adverse effects on the education, physical health, and mental well-being of children. An understanding of the impact of school closures and reopenings as well as factors influencing school safety is critical to bringing schools' operational status back to normal. Despite the implication of individual concerns and knowledge on disease prevention practices, there is a paucity of research on individual knowledge, needs, and behaviors in the context of school reopenings. In the proposed study, we will conduct a scoping review to identify and inventory the current research and evidence on the impact of COVID-19 on K-12 schools (primary and secondary schools and vice versa.)"

Comment 2: Throughout the study protocol the authors use the terminology K-12 which is an american expression used to refer to primary and secondary education [A,B]. This terminology was new to me and it might be confusing for some. Although the authors define in their manuscript, I am not sure using this term throughout the study protocol (and the future manuscript) is really helpful.

Author Response: Thank you very much for pointing this out. We really appreciate this comment. The terminology varies from country to country. We have included both types of terminologies throughout the manuscript in order to avoid causing confusion.

Comment 3: I initially had some doubts on the use of google translate for a systematic review process. While looking at the literature on the topic, there seems to be contradictory evidence (e.g., [C] VS [D]). While [C] is more recent than [D], the limitations stated by the authors are pretty clear and I wonder of the validity of the method. The breadth of languages already spoken by the authors seems big enough IMHO to have a wide variety of articles. Nonetheless, further examination of the literature seem to point that translators can be reliable [E,F]. I wonder if the authors have considered using DeepL too to perhaps check on what they will obtain from google translate.

Author Response: We thank Dr. Besançon for this thoughtful point. We are grateful for the recommendation. We have added DeepL in our method to help with reading manuscripts in foreign languages. The sentence now reads:

“To assist us in processing foreign language manuscripts, Google Translator and DeepL will be used.”

Comment 4: From the content of the study protocol and the queries that the authors have made accessible in the manuscript, it would seem that the authors plan to exclude all papers containing “college” or “university”. I wonder if this could not exclude papers that would contain school and university both (although I am not sure if there are such papers), and if the authors should not think of excluding “kindergarten” or “pre-school”.

Author Response: We greatly appreciate this thoughtful comment. Upon investigating the circumstances that Dr. Besançon mentioned, we verified that relevant papers were available through our citation chaining process. For example, *Room-level Ventilation in Schools and Universities by McNeill* is one of the papers that is relevant, but is excluded from the initial search. However, this paper will be retrieved in the citation chaining process through the paper *Ten scientific reasons in support of airborne transmission of SARS-CoV-2* by Greenhalgh et al.

Comment 5: For the critical appraisal, I wonder if the authors did not use the wrong citation. While looking for the JBI's critical appraisal tool (provided as a link in ref 32), I encountered a “page not found”. I suppose the authors probably wanted to reference [G]. This reference notably states that “Critical appraisal or some similar assessment of the quality of the literature included in a systematic review is essential. A key characteristic to minimize bias or systematic error in the conduct of a systematic review is to have the critical appraisal of the included studies completed independently and in duplicate by members of the review team. The systematic review should present a clear statement that critical appraisal was conducted by at least two reviewers working independently from each other and conferring where necessary to reach a decision regarding study quality and eligibility on the basis of quality. “ I would therefore like to know more on how critical appraisal will be conducted (how many reviewers/coders and how disagreements will be handled) and in particular how critical appraisal will be done for papers that are not in English.

Author Response: We sincerely thank Dr. Besançon for pointing it out. We have updated the citation link to reflect the current accessible version. Two independent reviewers will conduct the critical appraisal. A third independent reviewer will evaluate disagreements. All foreign language manuscripts will be translated using Google Translator and DeepL, and then a critical appraisal will be conducted. The protocol has been updated to reflect the details of the critical appraisals.

Comment 6: In the authors' manuscript, I could not directly find how they plan to handle different article types. In particular when it comes to COVID19 and schools, different articles types have been used with widely different purposes. Many opinion papers have been published that only use data from previous papers while "research letters" or "letters to the editors" have sometimes presented data (e.g., [H]) that is even claimed to be a peer-reviewed letter to the editor [I]).

Author Response: Thank you very much for pointing this out! One of the objectives of our scoping review is to identify the types of available publications on this topic. In order to address this concern, we have added the following components to the data extraction chart -- Types of publications, Original Evidence Presented (Yes, No, Others).

Comment 7: I feel like the research questions in this study protocol are very broad and I wonder whether they might actually be too broad. In their article summary, the authors state that the findings "will contribute significantly to keeping K-12 school members safe" but the question on evidence/findings of previous studies is not even part of the research questions that the authors have. Overall, I feel like there is a mismatch between the expected outcome of the study and the research questions. I would tend to argue that the research questions would need to be refined and that the expected findings should match the research question(s) better. To some extent I also wonder, and I would very much like to discuss this further with other reviewers or the authors, whether the scope that the authors set out for their study protocol is not too large. Indeed, from the manuscript and the different research questions, expected findings and data chart template, it would seem that the authors are trying to understand the impact of school closure on the spread of COVID, the impact of schools reopening on the virus, and the impact of school closure on children (as far as mental health and learning outcomes etc...). It seems that each and everyone of these topics would need its own review somehow so I wonder if the goal of this proposed review is not too ambitious.

Author Response: Thank you very much for this truly valuable comment. We have re-written our data extraction template chart to include a brief explanation for each outcome that we are going to extract. In addition, the research questions and the concept have been rephrased in order to clarify the concept and to avoid any ambiguity.

Comment 8: The current data chart template does not seem to propose to classify articles based on which strain of the virus they focus on. If the authors focus on the impact of school closures/openings on the transmission of the virus (as seems to be the case, cf my previous point), then I would tend to argue that the strain of the virus should be considered as potential thing to note for each article as well, in particular of the recent evidence that Delta seems to be more contagious and (potentially conflicting evidence here) might be more harmful for youngsters than previous variants.

Author Response: Thank you very much for this insightful comment. We agree that the strains of the virus play a very important role in school status and protocols. This component has been added to the data extraction template.

VERSION 2 – REVIEW

REVIEWER	Derek Shendell Rutgers School of Public Health, Environmental and Occupational Health and Justice
REVIEW RETURNED	29-Sep-2021
GENERAL COMMENTS	Thank you for revising your scoping review manuscript based on comments from the Editor in Chief as well as four independent peer-reviewers (I was #1 in your responses to reviewers). Please see attached file below for final specific comments to address or rebut. The highlighted text relates to what I confirmed you had corrected or

	expanded in the revised manuscript based on my reviewer comments (thanks), except for two places (Strengths and Limitations, Concepts) where I believe edits remain warranted.
REVIEWER	Lonni Besançon Monash University
REVIEW RETURNED	27-Sep-2021
GENERAL COMMENTS	<p>I would first like to thank the authors for their detailed response letters, their revised manuscript (and its version with changes highlighted).</p> <p>I have read through the reviews and the authors' response to them and I would tend to argue that the authors have answered the referees' points thoroughly. In particular, I would argue that Dr. Brainard (R3) raised an important point on the topic of the concept behind a scoping review. I would argue that the authors have addressed it well in their response and in the revised manuscript.</p> <p>My initial recommendation was a minor revision and I am happy to see all the changes that the authors have done to address the points raised in the reviews. I have a number of very small additional or follow-up questions comments that I would like to raise below.</p> <p>Looking at Table 1 and the data-extraction process overall, I have a number of follow-up questions.</p> <p>The first one is what the authors hope to capture with "Profession of the authors". I would tend to think that in most cases it would be "researcher." Of course gathering such information does not hurt, but I am just unsure what the authors would expect to get from this or how it would be extracted exactly.</p> <p>If the funder is extracted, one might as well extract reported conflict of interest perhaps?</p> <p>I would tend to add a link to the paper (hopefully with a DOI in most cases though some manuscripts might not have one).</p> <p>Does "duration" in the key characteristics of the population describe only "how long" or does it collect specific starting and ending dates?</p> <p>My last point is a comment/question for which I am not sure I expect an answer through the protocol presented here. I have not read many scoping reviews nor have I written one myself, but I wonder how much they suffer from "spin" (see e.g., [A,B]). If scoping reviews do not suffer from spin, then I guess this issue is solved, but spin is quite common in the literature, and I just wonder how to best both identify and report it. While the consequences of spin can be avoided by carefully reading each manuscript (and potentially its pre-registration), I just wonder if the authors planned to address this somehow. Perhaps this comment is misguided or outside the scope of a report on the protocol of a scoping review, but I thought it'd be best to raise this question now rather than after the data collection has been done.</p> <p>Re: "We greatly appreciate this thoughtful comment. Upon investigating the circumstances that Dr. Besançon mentioned, we verified that relevant papers were available through our citation chaining process. For example, Room-level Ventilation in Schools and Universities by McNeill is one of the papers that is relevant, but is excluded from the initial search. However, this paper will be retrieved in the citation chaining process through the paper Ten scientific reasons in support of airborne transmission of SARS- CoV-</p>

	<p>2 by Greenhalgh et al.”</p> <p>I am not sure how the authors proceeded to verify that relevant papers would not be excluded but I would tend to think that it does not matter.</p> <p>Overall, I would be in favor of an “accept”. I do not know if the comments I raised here warrant a minor revision but I would argue that they do not necessarily (I leave the final call to the editor). I hope this last set of comments is helpful to the authors.</p> <p>REFs: [A] https://doi.org/10.1111/cob.12292 [B] https://doi.org/10.1136/bmjebm-2019-111176</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer 1 Comment: This new/additional required section (by Editor) seems to be two strengths followed by three limitations; but, only the fourth of five bullets starts with " A limitation of the proposed review...." For this reviewer, it seems this should be a sub-heading before bullet points #3-5? Similarly, before bullet points #1-2 you could have a sub-heading though it does not seem necessary given how each is worded.

Author Response: Thank you very much, Dr. Shendell, for highlighting this point. We agree that subheadings can improve the clarity of the section and enhance its organization. The subheadings have been added to this section. The text now reads:

Strengths and Limitations

Strengths

- The proposed study is the first and only scoping review to thoroughly inventory current studies on the impact of COVID-19-related K-12 schools (primary and secondary schools) closures and reopenings.
- The scoping review is reviewing literature from a comprehensive set of databases and grey literature hubs.
- A strength of the proposed review is that the author group can read at least 3 languages and we also will utilize translating software to review articles that are not written in English.

Limitations

- The scoping review methodology will not allow us to directly assess safety strategies and make conclusions on safety interventions
- We rely on the subject index and English titles and abstracts to retrieve foreign language papers.

Reviewer 1 Comment: Please delete the final sentence of the "Types of Participants" section.

Author Response: We thank Dr. Shendell very much for this comment. The final sentence has been deleted to make the sentence more concise.

Reviewer 1 Comment: The “Concept section” still reads like three potential scoping review tasks.

Author Response: We thank Dr. Shendell sincerely for this comment. This section has been revised to reflect the focus and emphasis of this scoping review. The text now reads:

- “1) A summary of the topics that has been studied and published on school reopenings;
- 2) The types of research studies and publications on primary and secondary schools and COVID-19
- 3) Knowledge gaps regarding the impact of COVID-19 on primary and secondary schools and school members.”

Reviewer 4 Comment: I have a number of follow-up questions. The first one is what the authors hope to capture with “Profession of the authors”.

Author Response: Thank you very much, Dr. Lonni Besançon, for this question. Our goal is to identify the field or profession of the authors, such as educators, physicians, public health officials, or government officials. This will enable us to better understand their perspectives. The phrase has been revised to "Field and Profession of the Authors."

Reviewer 4 Comment: Does “duration” in the key characteristics of the population describe only “how long” or does it collect specific starting and ending dates?

Author Response: Thank you very much, Dr. Besançon, for pointing out the confusion. The exact starting and ending dates will be noted. Considering the fast-evolving nature of the pandemic, the time point within the pandemic is important. The term has been rephrased to "Duration/Start and End Dates."

Reviewer 4 Comment: If the funder is extracted, one might as well extract reported conflicts of interest perhaps?

Author Response: Thank you very much, Dr. Besançon, for this thoughtful comment. We have added “conflicts of interest” to the Data Extraction Chart to address this missing component.

Editor Comment: Please revise the second point of the Strengths and Limitations section after the abstract. This section should contain up to five short bullet points, no longer than one sentence each, that relate specifically to the methods. The novelty, aims or expected impact of the study should not be summarized here.

Author Response: Thank you very much for pointing this out. We have revised the second point of the Strengths and Limitations to:

Strengths and Limitations

Strengths

- The proposed study is the first and only scoping review to thoroughly inventory current studies on the impact of COVID-19-related K-12 schools (primary and secondary schools) closures and reopenings.
- The scoping review is reviewing literature from a comprehensive set of databases and grey literature hubs.
- A strength of the proposed review is that the author group can read at least 3 languages and we also will utilize translating software to review articles that are not written in English.

Limitations

- The scoping review methodology will not allow us to directly assess safety strategies and make conclusions on safety interventions
- We rely on the subject index and English titles and abstracts to retrieve foreign language papers.

Editor Comment: Unfortunately, your response to reviewer 3's third comment is not present in the revised manuscript. Please ensure that your response to this comment is included in the revised manuscript. -- The information stated on the Data Chart Template is too vague, it needs to be more specific or people will extract inconsistently. Will there be dual independent data extraction, how will disagreements be resolved. Is there a separate full text review stage?

Author Response: Thank you very much for pointing this out.

The Data Chart Template has been updated to reflect the detailed elements of the information we are extracting as well as an explanation of the data extraction method for each variable.

There will be a dual independent full-text review stage, and a dual independent data extraction. Conflicts will be resolved by a third independent reviewer. The methods section has been updated to include details of the review and extraction process. The section now reads:

“We will conduct two rounds of screening. Two independent reviewers will screen the title and abstract, as well as the full text of the manuscript retrieved by our search strategy. Conflicts will be resolved by a third reviewer. We will conduct a dual independent data extraction. To ensure accurate data extraction, two independent reviewers will extract each article using an online form called Qualtrics. A third independent reviewer will resolve any disagreements. We developed a charting template to facilitate the extraction of data across reviewers regarding characteristics of articles included in our review and key details pertinent to our objectives. The form will be refined (or consolidated) once a sample of studies has been charted independently by two or more reviewers. Both quantitative and qualitative data are expected to be included in the results of the review. These findings will be presented in the form of narratives and visuals, such as evidence ‘maps’ and tabular presentations.”

Reviewer 4 Comment:

My last point is a comment/question for which I am not sure I expect an answer through the protocol presented here. I have not read many scoping reviews nor have I written one myself, but I wonder how much they suffer from “spin” (see e.g., [A,B]). If scoping reviews do not suffer from spin, then I guess this issue is solved, but spin is quite common in the literature, and I just wonder how to best both identify and report it. While the consequences of spin can be avoided by carefully reading each manuscript (and potentially its pre-registration), I just wonder if the authors planned to address this somehow. Perhaps this comment is misguided or outside the scope of a report on the protocol of a scoping review, but I thought it’d be best to raise this question now rather than after the data collection has been done.

Author Response: We are grateful for Dr. Besançon's insightful comment. After reading Dr. Besançon's comment, we have conducted extensive literature research and have come up with the following strategies.

On avoiding spin in our scoping review:

- 1) We have prespecified our data extraction plan and our quality assessment plan in the protocol, and any deviations will be explicitly discussed in the review. Our plans for *charting* the results are not detailed because scoping reviews are, to a degree, exploratory research rather than confirmatory.
- 2) While there is empirical evidence of spin in systematic reviews of intervention studies and diagnostic test accuracy, we are not aware of any empirical treatments of spin in scoping reviews per se. Without claiming that scoping reviews are immune to questionnaire research practices, we don't immediately see how some of the most common types of spin (ex. Highlighting secondary outcomes with positive findings, or bragging about a “beneficial” intervention even though the difference was statistically nonsignificant) would occur in the context of a scoping review.

On identifying spin in the included studies:

- 1) Although scoping reviews don't have to have Review of Biases, we are performing it in our review; this evaluation of methodological quality is our pathway to identify spin in included studies.

- 2) In light of Dr. Besançon raising the issue, we'll have the data extractors read key meta-research articles about spin (in both intervention and observational studies) to "prime" them to be aware of common spin/overinterpretation/questionable research practices that may be present in included articles.
- 3)

VERSION 3 – REVIEW

REVIEWER	Derek Shendell Rutgers School of Public Health, Environmental and Occupational Health and Justice
REVIEW RETURNED	23-Nov-2021

GENERAL COMMENTS	Thank you for final abstract and "strengths and limitations" section with final revisions.
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REVIEWER	Lonni Besançon Monash University
REVIEW RETURNED	30-Nov-2021

GENERAL COMMENTS	<p>I thank the authors for their rebuttal of the points raised in the reviews. I also appreciate that the authors have looked into spin and its literature, my comment was mostly a discussion point/question but I think the authors addressed it well.</p> <p>I have one slight additional question: the manuscript still states that the scoping review will take place between August 1 and November 15. Probably something to update there, unless I am mistaken. But this is a minor enough chance to not warrant another round of revision IMO.</p> <p>I am personally satisfied with the scoping review protocol as it is presented. I have also read their comments and responses to the other reviews which are think are also acceptable. I thank the authors for the many additional responses and details they have provided through each round of review. I will therefore suggest accepting the manuscript.</p>
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